

A Study Of Adherence To Treatment In Patients With Chronic Heart Failure

Madaminov Azizbek M.¹, Shoalimova Zulfiya M.².
Tashkent Medical Academy, Tashkent, Uzbekistan.

Abstract

Adherence to treatment in patients with chronic heart failure was studied. Modern approaches to managing patients with chronic heart failure involve comprehensive drug therapy, symptom control and lifestyle changes. Therefore, the adherence to treat patients with chronic heart failure and study of its characteristics is a crucial issue.

Key words: adherence to treatment, heart failure, guideline-directed medical therapy, ejection fraction

Objective of the study. To study treatment adherence and its association in patients with heart failure with preserved ejection fraction.

Material and Methods. 64 patients with diagnosis of heart failure with preserved ejection fraction were selected for the study. 41 patients were previously observed, 23 patients applied for the first time. During the first visit and after 1 year the general adherence to drug therapy was determined using the National Society of Evidence-based Pharmacotherapy Adherence Scale questionnaire, and ejection fraction was evaluated in these patients. Adherence was assessed in points: 0 points - absolute adherence; 1-2 points - partial, incomplete adherence; 3 points - partial nonadherence; 4 points - absolute nonadherence. Patients who scored 0 points on the questionnaire were considered committed; patients who scored 1 point or more were considered noncommitted.

Results. According to the results of the National Society of Evidence-based Pharmacotherapy Adherence Scale questionnaire 47% of patients were absolutely committed to the previously prescribed drug therapy, 43% - partially adherent and partially non-adherent, 10% - absolutely non-adherent. It was found that the most important factors influencing adherence to treatment are forgetfulness, fear of side effects of drugs and number of recommended drugs.

Conclusions. Adherence to drug therapy in patients with heart failure are crucial and further study and correction are required. The registry study allows to identify the relation between adherence to drug therapy and ejection fraction. This study shows for the first time the role of non-adherence to guideline-directed medical therapy in patients with heart failure with preserved ejection fraction.

Introduction. The study of treatment adherence in patients with heart failure does not lose its relevance due to low adherence of comorbid patients. Due to population growth, ageing, and the increasing prevalence of comorbidities, the absolute number of hospital admissions for heart failure is expected to increase considerably in the future, perhaps by as much as 50% in the next 25 years [1,2]. Identification of non-adherence factors will allow the practicing physician to correct them and improve disease outcomes. The problem of adherence to treatment and the study of nonadherence factors in patients with chronic heart failure is an essential element of the treatment process. M. Van der Wal and T. Jaarsma [3] analyzed 18 studies and found that in 80% of patients with chronic heart failure every 3rd hospitalization was due to decompensation of chronic heart failure due to nonadherence to medications. In a randomized controlled trial (RCT) BEAT-HF (Better Effectiveness After Transition-Heart Failure) showed that adherence to control of edema in patients with chronic heart failure is associated with a 19% reduction in mortality and 11% reduction in hospitalization rate, which proves the need to work on adherence in this cohort of patients [4]. The aim of the study was to investigate treatment adherence and its correlation in patients with heart failure with preserved ejection fraction.

Materials and Methods: Patients with verified heart failure with preserved ejection fraction who applied to the cardiology department of the Tashkent Medical Academy multidisciplinary clinic in the period from October 01, 2023 to November 30, 2024 were selected for the study. All patients signed informed voluntary consent to participate in the study at inclusion in the study. A total of 64 patients whose diagnosis of heart failure was clarified at inclusion were included. 41 patients were previously observed in the cardiology unit, 23 patients applied for the first time. Mean age of the patients was 63 ± 6.1 years, mean ejection fraction (EF) was 52% according to Simpson, BNP, NT-proBNP levels were determined in all patients and all exceeded the reference value. During the inclusion visit and after 1 year the general adherence to drug therapy was determined using the National Society of Evidence-based Pharmacotherapy (NSEP) Adherence Scale questionnaire, and adherence to drugs with proven effect on prognosis in patients with heart failure was studied. Adherence was assessed in points: 0 points - absolute adherence; 1-2 points - partial, incomplete adherence; 3 points - partial nonadherence; 4 points - absolute nonadherence [5,6]. Patients who scored 0 points on the questionnaire were considered committed; patients who scored 1 point or more were considered noncommitted. The study also assessed the ejection fraction of committed and noncommitted patients.

Result and Discussion. At inclusion in the study, 47% of patients were absolutely adherent to previously prescribed drug therapy, 43% were partially adherent, 8% were partially nonadherent, and 2% were absolutely nonadherent. After 1 year of follow-up the response rate was 94%, 4 patients refused contact for various reasons, their data were not included in the final analysis. After 1 year of follow-up, overall adherence to drug therapy and ejection fraction associated with it were reassessed. During this time the number of partially and absolute nonadherent patients slightly decreased. (Figure 1).

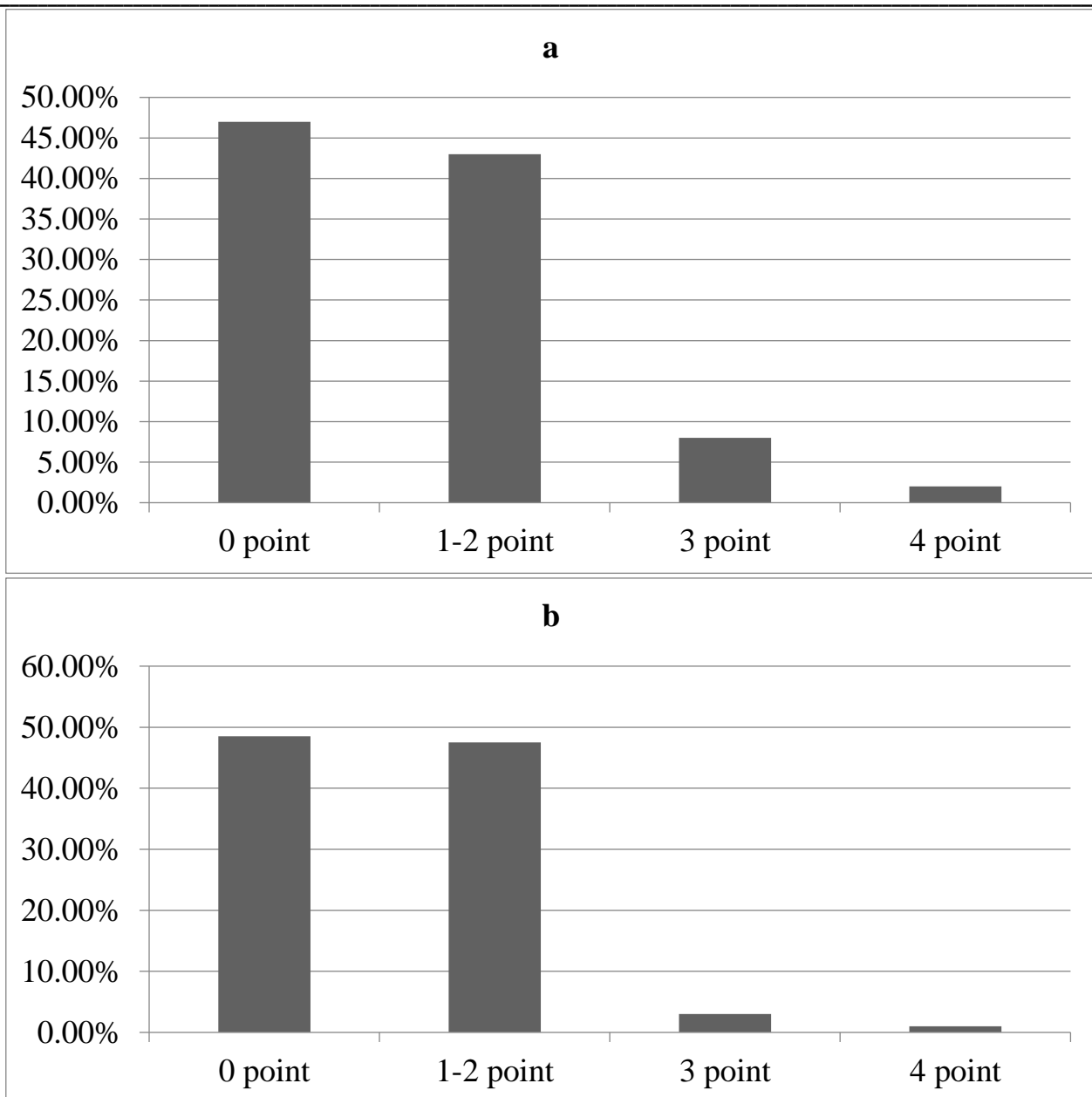


Figure 1. General adherence to treatment when including in the study (a) and after a 1 year of observation (b).

Patients reported worsening symptoms of heart failure were more likely to have poor medication adherence. Among the patients those are absolute nonadherent the mean left ventricular ejection fraction was 50% at admission and after a 1 year of study left ventricular ejection fraction decreased compare to other groups. In contrast, the patients who was absolute adherent felt improvement in their medical condition, left ventricular ejection fraction of these patients increased noticeably. After 1 year of observation, the advance of left ventricular ejection fraction in partially adherent patients was not considerable. The patients those are partially nonadherent did not experience any development in their health condition and left ventricular ejection fraction did not change after a 1 year of observation. The changes of mean left ventricular ejection fraction in different adherence groups the time of inclusion in the study and after a 1 year of follow-up are presented in (Figure 2).

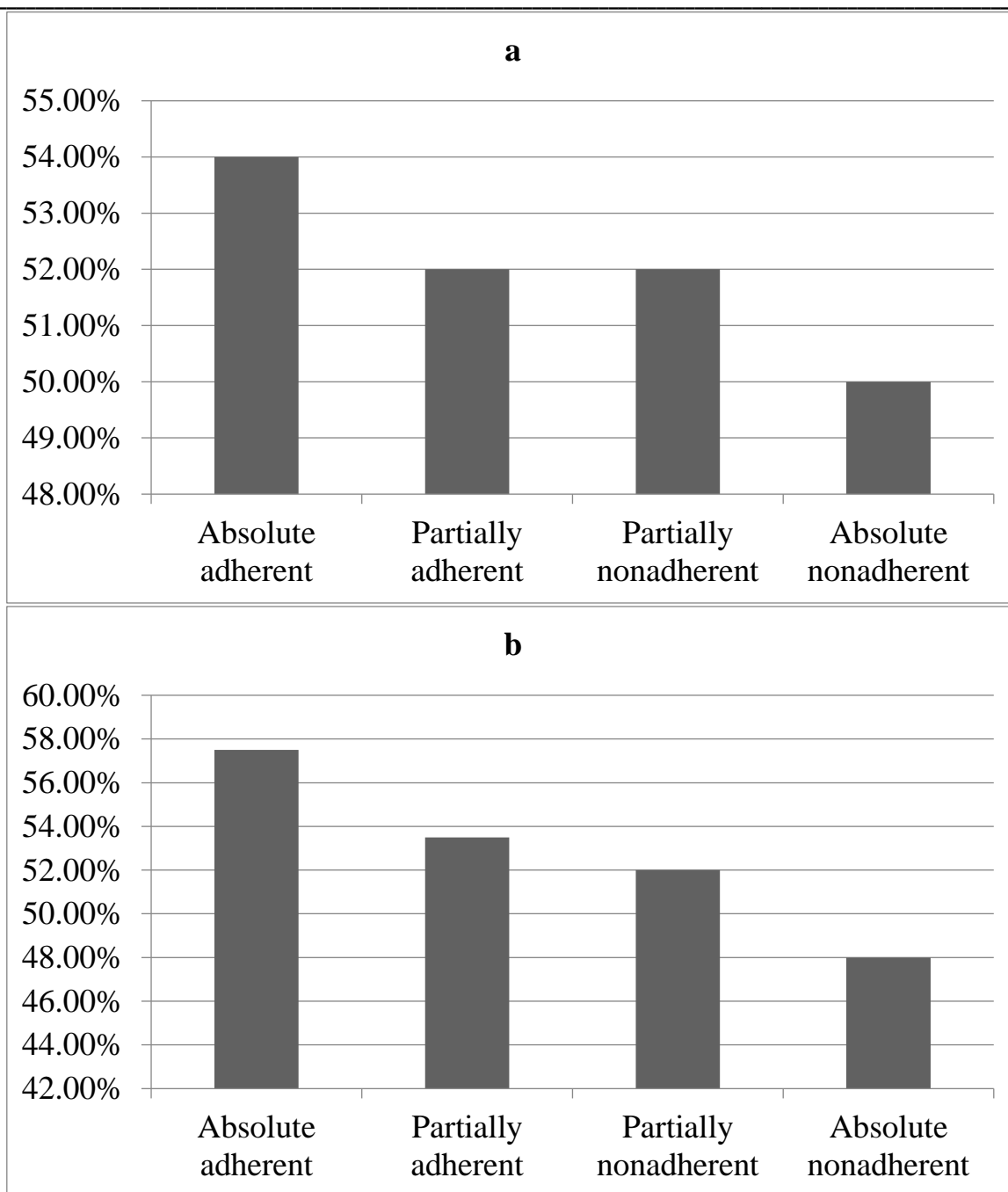


Figure 2. The changes of mean left ventricular ejection fraction when including in the study (a) and after a 1 year of observation (b).

The study assessed the patient's general adherence to treatment and their left ventricular ejection fraction. It should be noted that the number of nonadherent patients decreased after 1 year of follow-up compared to the study inclusion visit. In addition, comparing patients who were absolute adherent and those were not, it was found that there was a huge difference between their left ventricular ejection fraction and medical condition.

Conclusions. The factors of non-adherence to drug therapy in patients with chronic heart failure are different and further study and correction are required. Changes of patient's medical condition and their left ventricular ejection fraction have been identified in the current study. This study shows for the first time correlation between adherence to treatment and left ventricular ejection fraction in patients with heart failure.

Literature:

1. Savarese G, Lund LH. Global public health burden of heart failure. *Card Fail Rev* 2017;3:7-11.

2. Al-Mohammad A, Mant J, Laramée P, Swain S, Chronic Heart Failure Guideline Development Group. Diagnosis and management of adults with chronic heart failure: summary of updated NICE guidance. *BMJ* 2010; 341:c4130
3. Van der Wal MH, Jaarsma T. Adherence in heart failure in the elderly: problem and possible solutions. *International Journal of Cardiology*. 2008;125(2): 203-208.
4. Haynes SC, Tancredi DJ, Tong K, et al; Better Effectiveness after Transition-Heart Failure (BEAT-HF) Research Group. Association of Adherence to Weight Telemonitoring With Health Care Use and Death: A Secondary Analysis of a Randomized Clinical Trial. *JAMA Network Open*. 2020; 3(7):e2010174. <https://doi.org/10.1001/jamanetworkopen.2020.10174>
5. Martsevich S.Y., Huseynova E.T., Kutishenko N.P., et al. Assessment of adherence to drug therapy in patients with chronic heart failure: design and first results of the COMPLIANCE study. *Rational pharmacotherapy in cardiology*. 2020; 16(4):571-578.
6. Lukina Y.V., Kutishenko N.P., Martsevich S.Y., Drapkina O.M. Development and validation of new questionnaires in medicine on the example of the scale of adherence to drug therapy. *Rational pharmacotherapy in cardiology*. 2021;17(4):576-583. Lukina YuV, Kutishenko NP, Martsevich SYu, Drapkina OM. The questionnaire survey method in medicine on the example of treatment adherence scales. 2021;17(4):576-583.

1. Madaminov Azizbek Murodjon o'g'li - Master's student of the cardiology department of the Tashkent Medical Academy, e-mail: azizadti17@gmail.com, phone: +998916672858.
2. Shoalimova Zulfiya Mirobitovna - candidate of medical sciences, Associate Professor of Internal Medicine in Family Medicine №1 of the Tashkent Medical Academy, e-mail: shzm1974@mail.ru ; phone: +998935881210.